

## **ABSTRACT**

### ***DESIGN OF AUTOMATIC CUTTING SYSTEM ON SEED SEPARATOR MACHINE BASED MICROCONTROLLER***

*BALITSA (Vegetable Crops Research Institute) is a research center that have many activities, one of them is about plant hatcheries. one of the plants that have been hatchery is cucumber. Hatchery process or seeds have been separated with manual process using human power. When yields increase, the ammount of power needed automatically. in 2017, a cucumber seed separator was made. The machine performs two stages, cutting both ends and separating the seeds. in the cutting process position of the blade and cucumber did not move, so it made many cucumber were wasted. Due that reason, in this study we design a tools that cut both ends of the cucumber by adjusting the length of its to reduce the ammount of wasted cucumber with more efficient time.*

*Result of this study shows that with using this tools, the duration needed to cut both ends of 30 cucumbers takes 407 seconds with 96,575% cutout accuracy. when we compare with human power it takes 223,148 seconds with 71,25767% cutout accuracy with the same ammount of cucumber.*

*Due the result of this study, for cutting both ends of cucumber with the designed tools needs longer ammount of times than using human power. Time that needed are not fully efficient, but can be reduce human power that needed for cutting and separating cucumber seeds. Besides minimizing time, this tools can reduce the ammount of wasted cucumber until 25,31733%.*

**Keywords:** *cucumber, automatic cutting system, cucumber cutter*